Sedimentation

INTRODUCTION

The sedimentation lesson will enable the student to distinguish the different types of material that make up the ocean floor.

OBJECTIVES

By the end of this program, the student will be able to do the following:

- Define sedimentation and what causes it to occur.
- List and describe different types of sedimentation.
- Identify and describe the three major current systems that effect sedimentation off the coast of Cape Hatteras.
- Discuss how the bathymetric features on North Carolina's coast influence the types of sediments and the patterns in which they are deposited.

SEDIMENTATION Lesson Plan

1. Sediments are particles of organic (living) and inorganic (nonliving) origin that accumulate in loose form on the seabed.

2. Sedimentation in the ocean comes from four different sources.

    a) Rock (weathering)
    b) Organic material (biological)
    c) Dissolved compounds in the sea water
    d) Outer space

    It is delivered to the ocean via rivers, erosion from the coastline, settling out of deep ocean water, and from space.

3. Different types of sedimentation and its corresponding symbol can be found in NOAA chart #1; such as; S=sand, M=mud, Cy;CL = clay, Si=silt, St=stones, G=gravel, P=pebbles, Rk=rock, Co=coral, S/M= sand over mud, Wd=weed

4. In the search for the USS Alligator, there are three major current systems that affect the amount of sedimentation found around the Alligator search area.

    a) South-trending drift – brings sediments from north of Cape Hatteras and deposits them on the shelf or back into the Gulf Stream.
    b) Gulf Stream – flows from the southwest to the northeast. This strong current prevents sediments from being deposited on the continental shelf, pushing them onto the continental slope and rise.
    c) Deep Western Boundary Undercurrent – flows southwest opposite and underneath the Gulf Stream. Sediment from this current is deposited on the continental slope and rise.

Sedimentation Lab

Boulder
Cobble
Pebble
Granule
Sand
Silt
Clay
(list sizes of particles)

Stones
Sand
Screen
2-liter bottle

Cut top off of bottle, put stones in 2-liter bottle, cover with screen, use rubber band to hold screen in place,

OR

Use a couple of different screen sizes and sand with non-uniform grain sizes. Add sand to bottle and see the sand become separated due to size.